

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the specification

The specification is amended, as shown in the foregoing AMENDMENT TO THE SPECIFICATION, to correct a minor typographical error, in particular to correct the reference numeral 25 for the cross edge to read 26. It is respectfully submitted that no new matter is added, as the change simply corrects a minor informality.

Entry of the AMENDMENT TO THE SPECIFICATION is respectfully requested in the next Office communication.

2. In the claims

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended to more clearly point out the subject matter for which protection is sought.

Claim 21 is amended to clarify that the vertical gutters extend only from the bottom up to the upper wall. It is respectfully submitted that no new matter is added, since support for the amendments may be found, for example, at least in Fig. 4 of the pending application and, for example, at least on page 4, line 25 through page 5, line 2, and page 5, lines 3-9 of the accompanying description in the specification as originally filed.

Claims 22-30 are left unchanged.

New claim 31 is added to recite the further feature of the crosswise extending edge provided within the collector below the bottom of the housing. It is respectfully submitted that no new matter is added, since support for the amendments may be found, for example, at least in Fig. 4 of the pending application and, for example, at least on

page 6, lines 1-3, and page 8, lines 15-21 of the accompanying description in the specification as originally filed.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

3. Rejection of claims 21-24, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 3,925,040 (*Fattinger*) in view of U.S. patent no. 3,977,977 (*Kall*), and further in view of U.S. patent no. 1,935,822 (*Smith*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to amended claim 21, from which claims 22-24, 29, and 30 depend.

By way of review, amended claim 21 recites a heat exchanger, having a housing with a bottom, an upper wall and side walls, wherein onto two pairs of opposite side walls, the front wall and the back wall, respectively, are connected a supply and a discharge for a gas to be cooled. Means are provided in the housing for separating condensate from the cooled gas, comprising a series of corrugated vertical walls upon which are provided crosswise extending ribs forming vertical gutters extending only from the bottom up to the upper wall of the housing. Holes are provided in the bottom for the discharge of the separated condensate from the gutters via a collector. The collector extends from at least under the holes to under an opening which is provided in the bottom between the means for separating condensate and the back wall.

As is clarified in amended claim 21, the vertical gutters extending only from the bottom up to the upper wall of the housing, such that the gutters do not extend below the bottom and into the collector, as can be seen in Fig. 4 of the pending application, and as is generally described on page 4, line 25 through page 5, line 2, page 5, lines 3-9, and page 6, lines 4-9 of the accompanying description in the specification as originally filed.

With this configuration, the gas flow through the collector experiences less resistance, which produces the desirable result of minimizing pressure losses resulting from the flow of air or gas through the heat exchanger as a whole.

Turning to the *Fattinger* patent, a gas scrubbing plant is disclosed (title; abstract). In the gas scrubbing plant, drop traps 5, 7 are provided. The drop traps 5, 7 are configured as having vertical plates 20, which are bent in a zig-zag fashion (col. 3, lines 8-13). As shown in Fig. 1, the foot ends of the plates 20 project below the bottom of the scrubbing plant 3 and into the collecting ducts 14, 15 (col. 3, lines 17-18).

This is in contrast to amended claim 21, in which the vertical gutters extend only from the bottom up to the upper wall of the housing, such that the gutters do not extend below the bottom and into the collector.

Further, the *Fattinger* patent discloses a very specific shape for the zig-zag plates 20 to enable the flow passages to narrow and widen out in order to provide gas stream acceleration in order to provide the drop trap with an efficiency such that the plates do not have to be wettable by the liquid which is to be separated (col. 3, lines 46-50; col. 4, lines 36-38, 45-48, and 52-54).

Additionally, as acknowledged in the Office action on page 3, the *Fattinger* patent fails to disclose "a series of corrugated vertical walls upon which are provided crosswise extending ribs forming vertical gutters."

The Office action turns to the *Kall* patent as disclosing a series of corrugated vertical walls (separating elements 20) upon which are provided crosswise extending ribs (walls 28, 48) forming vertical gutters (gullies 24, 26).

However, there is no disclosure in the *Kall* patent that the gullies 24, 26 extend only from a bottom up to an upper wall of a housing, such that the gullies do not extend below the bottom and into a collector, as is required by amended claim 21. Since the *Kall* patent is silent on this feature, a person having ordinary skill in the art would look to

prior art devices, such as the gas scrubbing plant of the *Fattinger* patent, and discover that the prior art includes plates that extend below a bottom of a housing and into a collector, in contrast to the configuration recited in amended claim 21.

Further, given the very specific disclosed configurations of the plates of the *Fattinger* patent, for the purpose of providing the drop trap with an efficiency such that the plates do not have to be wettable by the liquid which is to be separated, a person having ordinary skill in the art would not have modified the plates of the *Fattinger* patent with the gullies 24, 26 of the *Kall* patent, since the configuration necessary to form the gullies would destroy the specific configurations of the plates of the *Fattinger* patent that are required to provide the drop trap with an efficiency such that the plates do not have to be wettable by the liquid which is to be separated.

Thus, a person having ordinary skill in the art would not have combined the features of the *Kall* patent with the gas scrubbing plant of the *Fattinger* patent, and even if such a combination were to be made, the proposed combination of the *Fattinger* and *Kall* patents still fails to disclose or suggest vertical gutters extending only from the bottom up to the upper wall of the housing, such that the gutters do not extend below the bottom and into the collector as is required by amended claim 21.

Additionally, as is acknowledged on page 4 of the Office action, the proposed combination of the *Fattinger* and *Kall* patents fails to disclose that “holes are provided in the bottom for the discharge of the separated condensate from the gutters via a collector,” as is required in amended claim 21.

The Office action turns to the *Smith* patent as disclosing holes in a bottom of a housing, as is required by amended claim 21. However, the *Smith* patent fails to provide for the other deficiencies of the proposed combination of the *Fattinger* and *Kall* patents.

Therefore, a *prima facie* case of obviousness cannot be established with respect to amended claim 21, from which claims 22-24, 29, and 30 depend, and withdrawal of this rejection is respectfully requested.

4. Rejection of claims 25-28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 3,925,040 (*Fattinger*) in view of U.S. patent no. 3,977,977 (*Kall*), U.S. patent no. 1,935,822 (*Smith*), and further in view of U.S. patent no. 5,983,996 (*Romero*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to amended claim 21, from which claims 25-28 depend.

The *Romero* patent fails to provide for the shortcomings of the proposed combination of the *Fattinger*, *Kall*, and *Smith* patents, as discussed above in detail with respect to amended claim 21.

Accordingly, withdrawal of this rejection is respectfully requested.

5. New claim 31

As mentioned above, applicant submits that independent claim 21 is patentable and therefore, new claim 31, which depends from claim 21, is also considered to be patentable as containing all of the elements of claim 21, as well as for its respective recited features.

In particular, new claim 31 recites a crosswise extending edge provided within the collector below the bottom of the housing, which feature is not shown in any of the *Fattinger*, *Kall*, *Smith*, and *Romero* patents. This configuration prevents condensate from being carried back to the heat exchanger with air flow through the collector, as discussed in detail on page 8, lines 15-21 of the accompanying description in the specification as originally filed.

6. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

Please charge any additional fees required or credit any overpayments in connection with this paper to Deposit Account No. 02-0200.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicant's attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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